

Context

The current method of jet engine health monitoring at Belgian air bases is considered to be time- and cost inefficient as it requires to open up the engine to extract oil samples and analyze them in the lab.

A method to facilitate this process by assessing jet engine health and the need to conduct preventive maintenance in a non-intrusive manner would be of great interest.

Objective

- Asses the spectral and spatial features in jet engine exhaust plumes indicative of engine degradation and engine component failure
- Develop the sensor suite capable of meeting the requirements of detecting early degradation in jet engines
- Develop ML algorithms capable of detecting early degradation in jet engines based on hyperspectral observations of exhaust plumes

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Jet Engine Health Monitoring using Hyperspectral Imaging and Artificial Intelligence

Methodology

Through real observations and intricate modelling of jet engine exhaust plumes, develop a large database of HSI measurements that allows training ML models to be able to detect the necessity of preventive maintenance of the engines.



Who



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